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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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February 18, 1993

Ms. Donna R. Searcy, Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

In re: Ex Parte Presentation
PR Docket No. 92-235 (Refarming Proceeding)
Ericsson GE Mobile Communications, Inc.

Dear Ms. Searcy:

In accordance with the provisions of Section 1.1206 of the Commission's rules, please be advised that on February 17, 1993, representatives of Ericsson GE Mobile Communications, Inc. ("Ericsson GE") met with Ralph A. Haller, Chief of the Private Radio Bureau, and Beverly G. Baker, Deputy Chief of the Private Radio Bureau, and discussed issues relating to the above-referenced proceeding.

Specifically, Ericsson GE made a presentation on views it has on the Refarming Proceeding including the need for the Commission to adopt a requirement for spectrum efficiency in the bands in question; support for the FCC's proposal to consolidate classes of users and to adopt a simplified Part 88; the need to adopt rules which allow technical flexibility and which do not impede implementation of a variety of spectrum efficient technologies; and the need for spectrum bands and the ability to stack channels. Ericsson GE also expressed the view that the use of very narrowband channels might not result in the most efficient use of spectrum. The combination of using trunking techniques and TDMA technology (with 25 kHz channels), however, can provide significant spectral efficiency and technical flexibility without having to engage in an extensive re-channelization required to accommodate very narrowband channels.

An original and one copy of this letter and additional materials used in connection with the presentation is being submitted for inclusion in the above-referenced proceeding. In addition, copies of this letter and attachments are being hand delivered this date to Mr. Haller and Ms. Baker.

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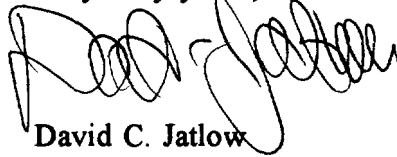
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Ms. Donna R. Searcy
February 18, 1993
Page Two

Should there be any questions with regard to this matter, kindly communicate directly with the undersigned.

Very truly yours,

A handwritten signature in black ink, appearing to read "David C. Jatlow", written over a horizontal line.

David C. Jatlow
Counsel for Ericsson GE Mobile
Communications, Inc.

FCC NPRM (Docket # 92-235)

Refarming

2/17/93



Simplification of Pt. 90

- **Consolidations**
 - • **Align Classes of Users**
 - • **Orderliness to Spectrum Assignments**

- **Opportunity to Reconcile User's Range (Coverage) with User Actual Need**

- **Minimize the Market Uncertainty by Proceeding to a Decision with Dispatch**



Efficiency vs. Technology

- **Flexibility of Rules Application of Technologies to Achieve Spectrum Efficiency Allows:**
 - • **Achievement of Efficiencies Greater than "Split Channel" Possibilities**
 - • **Yet to be Invented Technologies may be Applied in Future**
 - • **Minimizes Risk of a Technology call that is less than Optimum**



Spectrum "Bands" per User Class + "Stacking" Channels

- • **Minimizes "Class Clashes" (Except at Band-Ends)**
- • **Eliminates Conflict of Interleaved Allocations**
- • **Allows Additional Efficiency Improvements with Trunking Multiplier**
- • **Provides for Continuation of Trend to Ever-Increasing Data Rates**

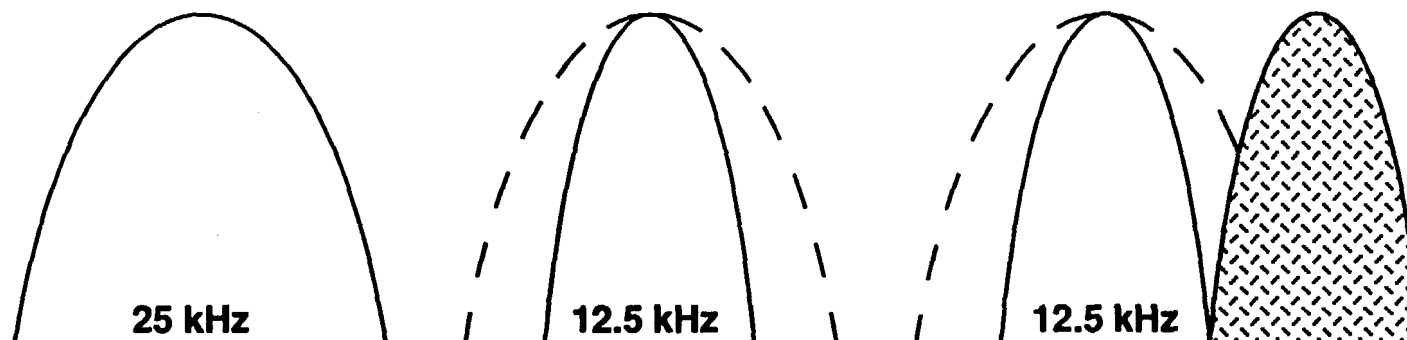
Mandate of Narrowband Technology

- Introduces "Risks" of Unproven Technology

- • Impulse Noise
- • Stability
- • Interferences

} vs. VNB

- Complicates Migration with Co-Sited Allocation at Transition Site



Refarming Keys

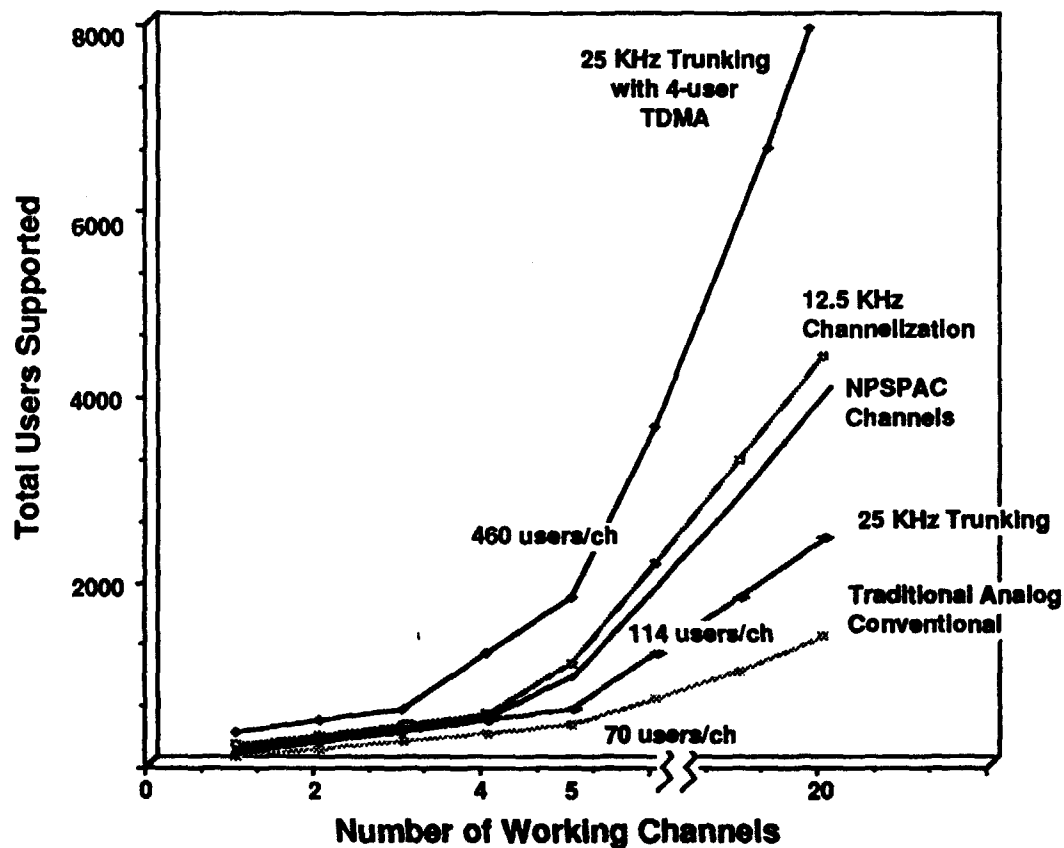
To Maximize Spectrum Efficiency, Rules Should

- **Allow Flexibility in Allocation of Technology
to Achieve the Benchmark Efficiency**
- **Allow Flexibility in Allocation of Channels
to Permit "Banding" of Classes and "Stacking"
of Contiguous Channels**

Technology Approaches to Spectrum Efficiency

- Increase in efficiency with trunking over conventional = 60% without Re-Channelization
- Increase in efficiency with Trunking & TDMA 100% to 300% without Re-Channelization
- Split Channel (narrowband) approach requires extensive Re-Channelization

Spectrum Efficiency Alternatives



Assumptions:

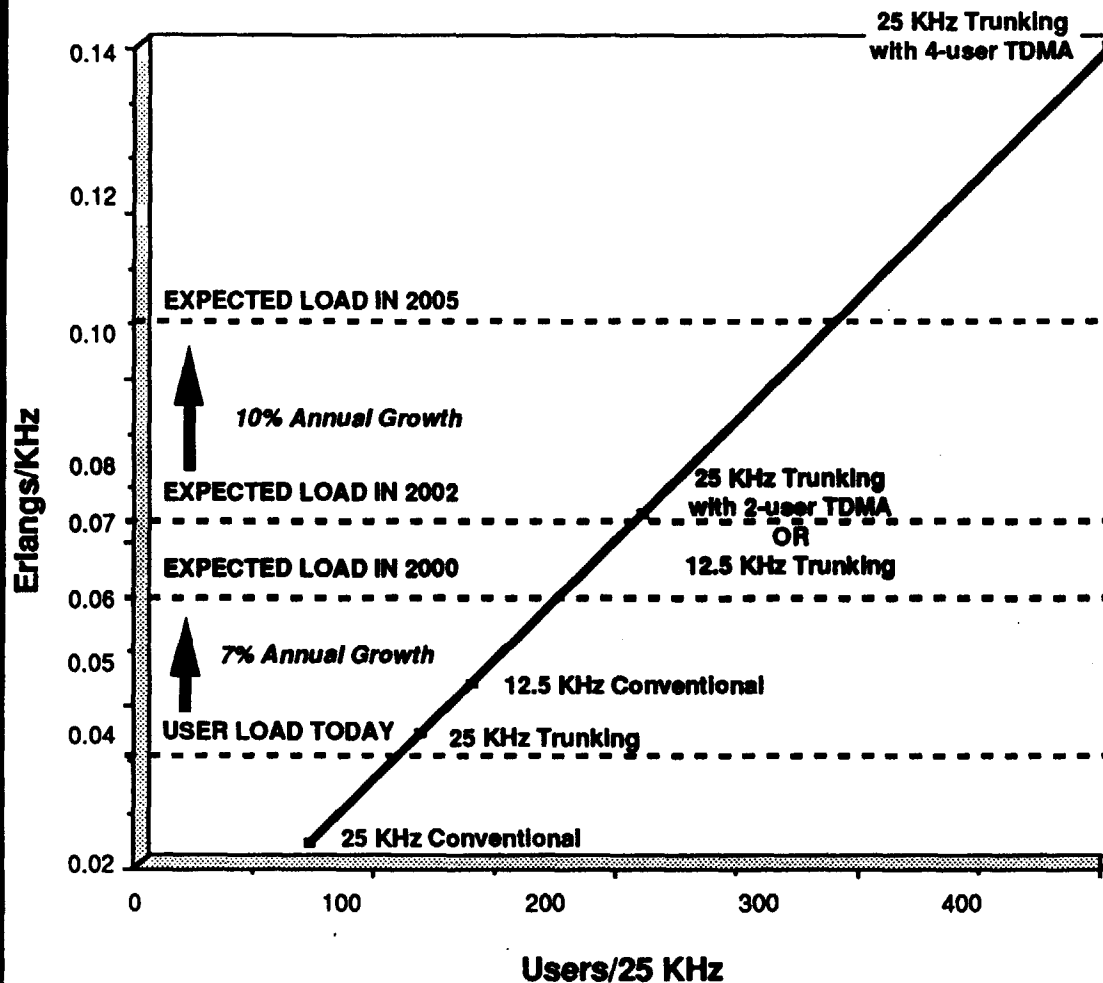
- Grade of Service (GOS) = 80%
- Offered Traffic = .008 Erlangs/Subscriber (typical LMR traffic)
- No Frequency re-use factor

- 4-TDMA + Trunking
- 12.5 KHz Channelization
- 25 KHz Trunking
- ◇— Conventional



Spectrum Management Alternatives

Erlangs/KHz vs. Users/25 KHz of Spectrum



• **User Load Today** refers to the traffic that *could* be generated if spectrum were available; The number shown here is representative of a *congested* traffic situation (about 25%-50% demand excess over supply)

• Annual growth rates taken directly from FCC projections for PLMR

TAKEAWAYS:

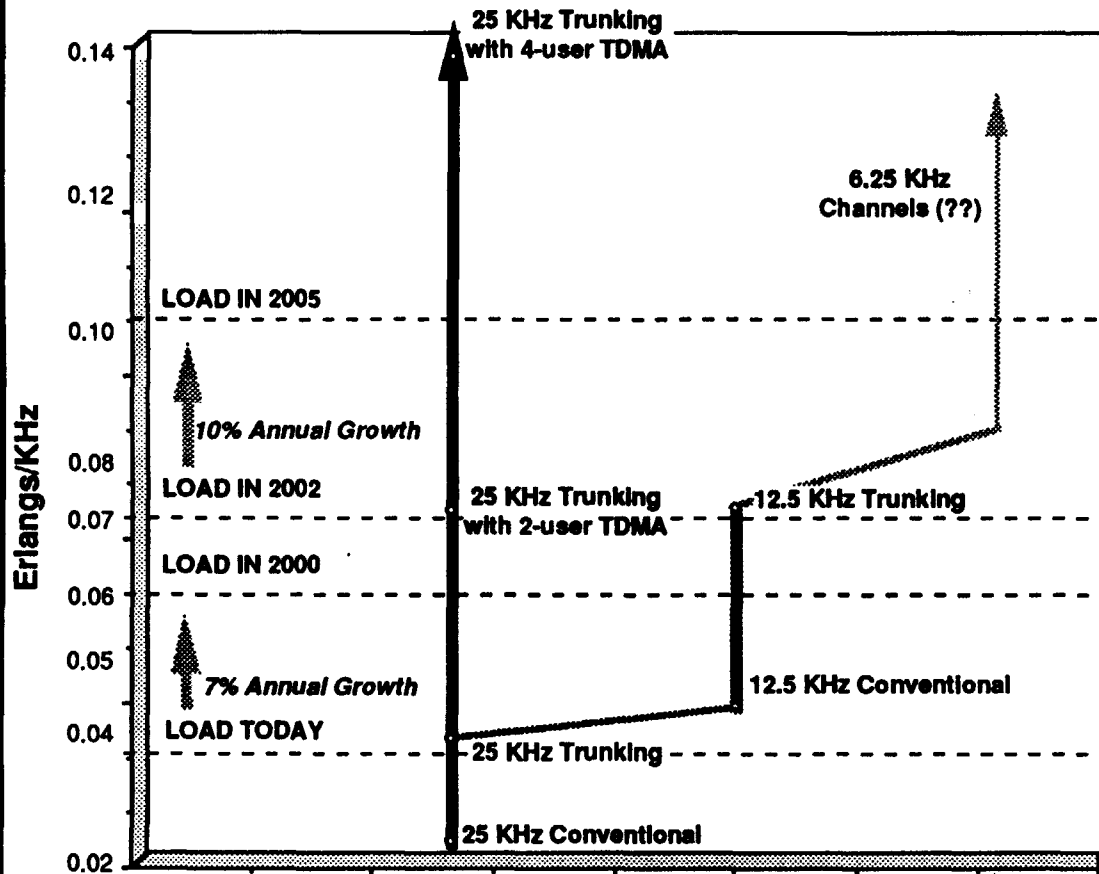
• 12.5 KHz channelization in 1996 will require further refarming by 2002

• **TRUNKING** with TDMA technology will cover the expected growth of users past **2005** without Re-channelization of today's 25 KHz

TRUNKING & TDMA are flexible alternatives for spectrum management

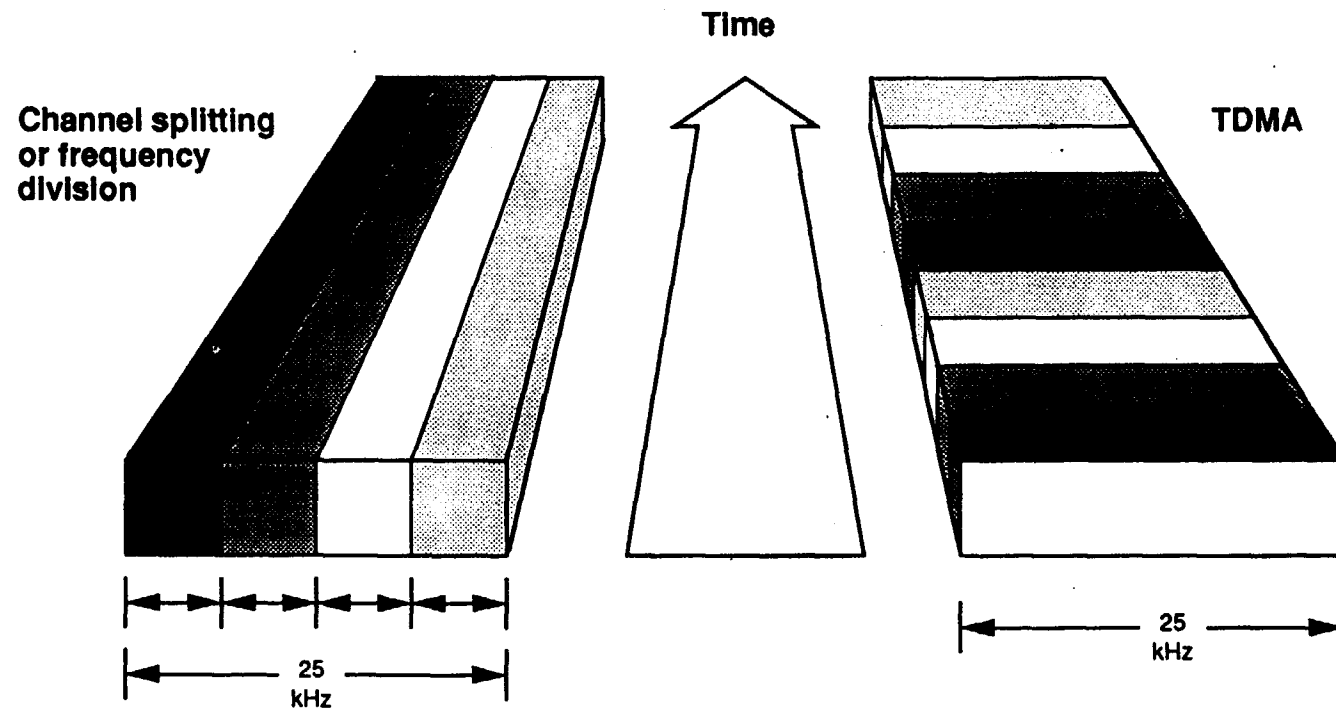
Spectrum Management Decisions & Consequences

Erlangs/KHz vs. Users/25 KHz of Spectrum



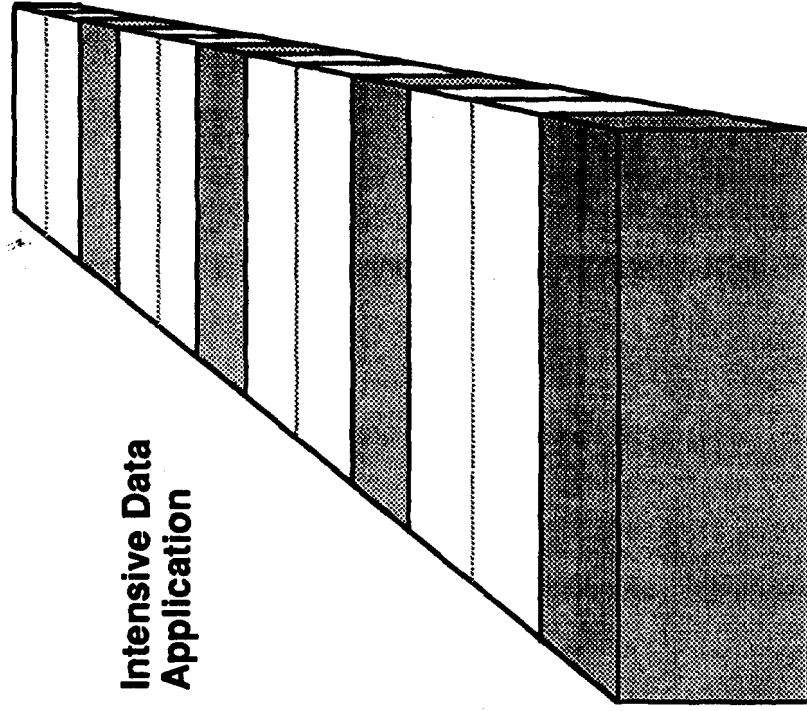
TRUNKING & TDMA are flexible alternatives for spectrum management vs. Periodic Refarming & Increasing Narrowband Channelization

Frequency Division versus Time Division Multiple Access

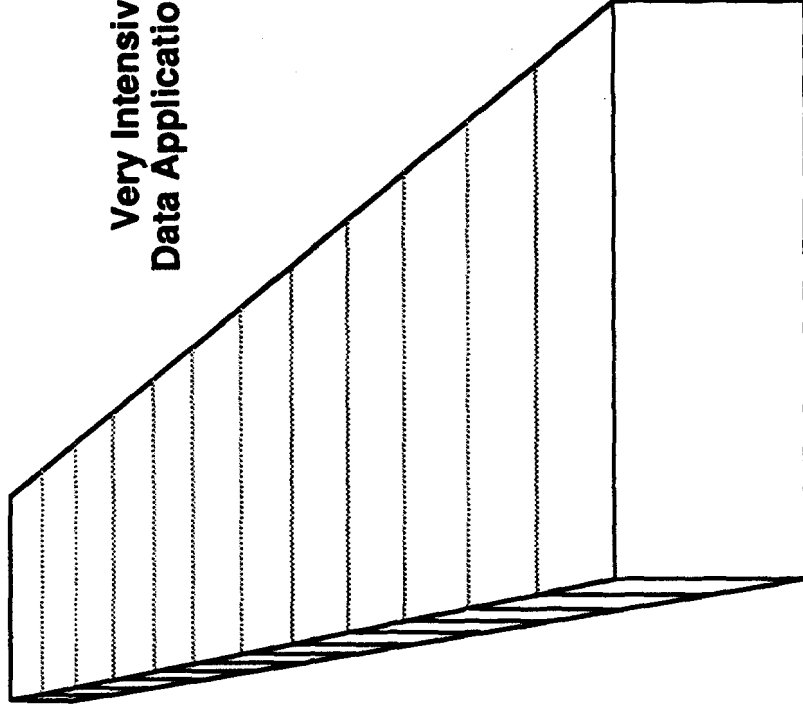
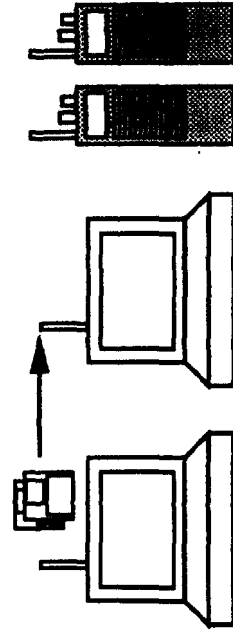


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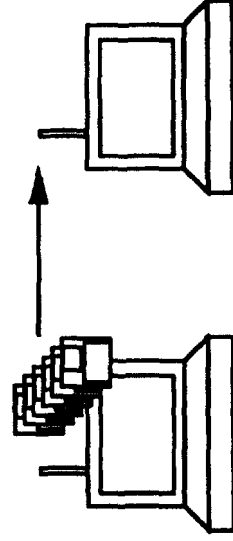
Digital Advantage - Data Flexibility



Intensive Data
Application



Very Intensive
Data Application



Mobile Communications

